STATEMENT OF WORK

Independent Technical Review for Operable Unit 1 at the West Lake Landfill Site

1. BACKGROUND INFORMATION

The West Lake Landfill Site is on a parcel of approximately 200 acres located in the northwestern portion of the St. Louis metropolitan area. It is situated approximately one mile north of the intersection of Interstate 70 and Interstate 270 within the limits of the city of Bridgeton in northwestern St. Louis County. The Missouri River lies about 1.5 miles to the north and west of the Site.

The Site consists of two radiologically contaminated landfill cells comprising Operable Unit 1 (OU-1) and the Bridgeton Sanitary Landfill (Former Active Sanitary Landfill) and several inactive areas with sanitary and demolition fill that have been closed comprising OU-2. Land use at the site and the surrounding areas in Earth City is industrial.

Other facilities which are not subject to this response action are located on the 200-acre parcel including concrete and asphalt batch plants, a solid waste transfer station, and an automobile repair shop.

The Site was used agriculturally until a limestone quarrying and crushing operation began in 1939. The quarrying operation continued until 1988 and resulted in two quarry pits. Beginning in the early 1950s, portions of the quarried areas and adjacent areas were used for landfilling municipal solid waste (MSW), industrial solid wastes, and construction/demolition debris. These operations were not subject to state permitting because they occurred prior to the formation of the Missouri Department of Natural Resources (MDNR) in 1974. Two landfill areas were radiologically contaminated in 1973 when they received soil mixed with leached barium sulfate residues.

The barium sulfate residues, containing traces of uranium, thorium, and their long-lived daughter products, were some of the uranium ore processing residues initially stored by the Atomic Energy Commission (AEC) on a 21.7 acre tract of land in a then undeveloped area of north St. Louis County, now known as the St. Louis Airport Site (SLAPS), which is part of the St. Louis Formerly Utilized Sites Remedial Action Program managed by the U.S. Army Corps of Engineers (USACE)

In 1966, residues associated with the production and refining of uranium materials were purchased by Continental Mining and Milling Company of Chicago, removed from the SLAPS, and placed in storage at the Hazelwood Interim Storage Site (HISS) on Latty Avenue under an AEC license. In 1967, Commercial Discount Corporation, which obtained possession of the HISS property and residuals, began drying residue and shipping them to Cotter Corporation in Canon City, Colorado (DOE 1987).

In 1969, residues remaining at the HISS were sold to Cotter Corporation in Canon City. In 1970, Cotter Corporation dried and shipped some of the remaining residues from the HISS to Canon City (DOE 1994). In December 1970, an estimated 10,000 ton of Colorado raffinate and 8,700 tons of leached barium sulfate remained at the Latty Avenue HISS.

Reportedly, 8,700 tons of leached barium sulfate residues were mixed with approximately 39,000 tons of soil and then transported to the West Lake site in 1973. According to the landfill operator, the soil was used as cover for municipal refuse in routine landfill operations.

The geology of the landfill area consists of Paleozoic-age sedimentary rocks overlying Pre-Cambrian-age igneous and metamorphic rocks. The Paleozoic bedrock is overlain by unconsolidated alluvial and loess deposits of recent (Holocene) age. Alluvial deposits of varying thickness are present beneath Areas 1 and 2. The landfill debris varies in thickness from 5 to 56 feet in Areas 1 and 2, with an average thickness of approximately 30 feet in Area 2. The underlying alluvium increases in thickness from east to west beneath Area 1. The alluvial thickness beneath the southeastern portion of Area 1 is less than 5 feet (bottom elevation of 420 ft/amsl) while the thickness along the northwestern edge of Area 1 is approximately 80 feet (bottom elevation of 370 ft/amsl). The thickness of the alluvial deposits beneath Area 2 is fairly uniform at approximately 100 feet (bottom elevations of 335 ft/amsl).

A subsurface oxidation event (SSE) is ongoing in the South Quarry Landfill portion of the Bridgeton Sanitary Landfill. The South Quarry cell is connected to the North Quarry cell which is adjacent to Operable Unit 1, Area 1, one of the locations on site that received the radiologically contaminated soils in 1973. Pursuant to an order from the Missouri Attorney General, the site owner is required to install a subsurface barrier between the North Quarry cell and OU-1 Area 1 to prevent the SSE from migrating into the radiologically contaminated materials.

As a follow-up to EPA R7 consultation with EPA's National Remedy Review Board (NRRB) in February 2012, the following evaluations are being conducted to assess the Remedial Alternatives for OU-1: 1) partial excavation evaluation; 2) alternative landfill cap designs; 3) evaluation on the use of waste treatment technologies, including apatite; 4) recalculation of RIM volumes for a full excavation scenario; 5) groundwater fate and transport modeling; and 6) recalculation of discount rate. These evaluations will be contained in a forthcoming Supplemental Feasibility Study (SSFS) Amendment or equivalent document.

II. OBJECTIVE AND SCOPE

The EPA is requesting assistance from the US Army Corps of Engineers (USACE) to conduct an Independent Technical Review (ITR) of specific documents associated with Operable Unit-1 at the West Lake Landfill and being developed in response to National Remedy Review Board (NRRB) comments.

The technical support may consist of performance of specific tasks which USEPA contractors have neither the expertise or cannot provide at reasonable cost to EPA.

III. WORK ASSIGNMENT TASKS

USACE shall furnish personnel and services required to conduct an ITR of reports prepared by the Responsible Parties in response to the recommended NRRB evaluation.

Tasks included in this scope are:

1. Project Planning and Support
2. Independent Technical Reviews
3. Community Relations Support
4. Close-Out

TASK 1 PROJECT PLANNING AND SUPPORT

This task includes work efforts related to project initiation, management, and support. Activities required under this task include the following, as applicable:

1.1 USACE shall participate in a scoping meeting with EPA to discuss the work assignment.

1.2 USACE shall provide proposed level of effort and costs for the support activities to be performed. Based on EPA's review of the scope, level of effort and cost estimate, USACE may be called upon to participate in negotiations with EPA on the proposed level of effort and to revise the level of effort as a result of these negotiations.

1.3 The USACE shall perform site-specific project management including:

1.3.1 Establishment and maintenance of necessary work assignment files, schedules, and project documentation

1.3.2 Provide monthly reporting and invoices. These documents shall contain narrative of specific task and subtask activities sufficient enough for the EPA Remedial Project Manager (RPM) to evaluate the work assignment progress.

1.3.3 Monitor costs and performance

1.3.4 Coordinate staffing and other support activities to perform the work assignment tasks in accordance with the Statement of Work (SOW) including USACE subcontractors, if utilized.

1.3.5 Attend necessary work assignment meetings

1.3 The USACE shall accommodate any external audit or review mechanism that EPA may require. Level of effort for this work will be determined at a later date and this IA will be amended to include this task and associated cost.

TASK 2 INDEPENDENT TECHICAL REVIEWS

This task includes the work required to conduct the ITR and documents the required deliverables.

2.1 USACE shall coordinate and prepare a review plan and assist EPA in preparing the reviewer's charge statement.

2.2 USACE shall perform an ITR of reports prepared by the Responsible Parties (RPs) in response to the NRRB consultation with EPA on the Supplemental Feasibility Study dated December 28, 2011. The purpose of the ITR is to provide an independent assessment of the RP's work products to ensure the scientific and technical components have been applied in a sound manner to meet established regulatory requirements. The ITR will be conducted by qualified individuals who are independent of those who performed the work, and who are collectively equivalent in technical expertise (i.e., peers) to those who prepared the reports.

The reports prepared in response to the NRBB recommendations will include:

2.2.1 Up to four ITR reports to address the following:

- The RP's evaluation of a partial excavation alternative;
- The RP's recalculation of RIM volumes to address alternate excavation scenario;
- The RP's evaluation of up to three alternative landfill cap designs;
- The RP's evaluation on the use of up to five waste treatment technologies, including apatite and soil sorting;
- The RP's results of groundwater fate and transport modeling; and
- The RP's recalculation of all alternatives using a 7% discount rate.

2.2.2. A Supplemental Feasibility Study Addendum or equivalent document.

2.2.3 A Revised Proposed Plan, if required. If a Revised Proposed Plan is required, the level of effort for the ITR will be determined at a later date and this IA will be amended to include this task and associated cost.

2.2.4 An Amended ROD, if required. If a Revised ROD is required, the level of effort for the ITR will be determined at a later date and this IA will be amended to include this task and associated cost.

2.3 USACE ITR team will review historical documents for familiarity and understanding of the site. Historical documents will not be the subject of the ITR. Historical documents to be reviewed include, but may not be limited to the following:

- OU1 Site Characterization Summary Report
- OU1 Remedial Investigation Report
- OU1 Baseline Risk Assessment
- OU1 Feasibility Study
- OU1 Supplemental Feasibility Study
- OU1 Record of Decision
- EPA Radiological and Infrared Survey Report (ASPECT) (May 2013)
- MDNR Radiological Survey Report (May 2013)
- Radiation Management Corporation Radiological Survey (1982)
- NRC Radioactive Material in West Lake Landfill (1988)

2.4 USACE shall prepare an ITR report for each of the documents reviewed. The letter report will contain USACE's technical evaluation and, to the extent practicable, shall be written in terms understood by the general public. The letter report will be submitted to EPA as a "final" product. The number of days allotted for completion of the ITR will be jointly determined and agreed upon by EPA and USACE based upon the size and nature of the document to be reviewed, but shall be no less than 45 calendar days for any review.

2.5 The USACE ITR will focus exclusively on the scientific and technical aspects of the documents and whether the scientific and technical components have been applied in a sound manner to meet established regulatory requirements. It will not address grammatical, editorial, or formatting aspects of the document.

2.6 The USACE ITR team shall participate in one technical meeting with EPA and the RPs for each of the documents reviewed. The purpose of these meetings will be to provide clarification on any comments. These meetings will be conducted in the St. Louis area. If not able to be accomplished via an in-person meeting, the meeting shall be accomplished by phone and internet (Web Meeting).

2.7 EPA shall furnish USACE with the following:

2.7.1 Background documents, data, and other information necessary to ensure the ITR's completeness;
2.7.2 Notification, at least 30 days in advance, of submittal of a document for review
2.7.3 A tentative schedule identifying anticipated document submittal dates, review times, and meetings.

TASK 3 COMMUNITY RELATIONS SUPPORT

This task includes efforts related to community relations support to EPA. Activities required under this task include the following:

3.1 Upon issuance of this IA, USACE shall attend two community meetings to inform the public of USACE's support to EPA under this IA and answer questions. For the initial public meeting after IA release, USACE will prepare a Power Point presentation or other visual aids, as required to communicate the ITR process to the public. For the second public meeting after the IA release, USACE shall attend to answer any remaining public questions regarding the IA scope.

3.2 Upon completion of the review of each document, USACE staff shall attend a community meeting and present a description of the work accomplished by USACE and the findings of the ITR. The presentation will be provided via Power Point, or via other means, if required. An electronic file of the PowerPoint presentation shall be furnished to EPA at the meeting. USACE shall furnish 50 paper copies of the PowerPoint presentation for distribution to the public.

3.3 USACE staff shall be available to participate in pre- and post-meeting public availability sessions for the meetings at which the USACE reviews are presented. USACE shall provide necessary public availability session displays and information packets (up to 50 handouts of Power Point presentation).

3.4 EPA, as lead agency, shall be the central point of contact for all project stakeholders. If requested by EPA, USACE shall provide written responses to written questions received by EPA from the community regarding USACE's scope of work for the ITR effort.

TASK 4 WORK ASSIGNMENT CLOSE-OUT

This task includes efforts related to work assignment close-out. Activities required under this task include the following:

4.1 Upon notification by EPA, the USACE shall begin all internal procedures necessary to close out the work assignment including any file duplication, distribution, storage, or archiving per the contract requirements.

4.2 The USACE shall return documents identified to EPA or other document repositories as directed.

IV. WORK ASSIGNMENT PERIOD OF PERFORMANCE

July 15, 2014 to December 30, 2016

V. SCHEDULE OF DELIVERABLES/MILESTONES

TASK	DELIVERABLE	SUBMITTAL SCHEDULE
1.3.2	Monthly Reports/Invoices	Throughout period
2.2	ITR Reports	Per agreed upon schedule

VII. EPA CONTACTS

Project Manager	Dan Gravatt	913-551-7324
Project Officer	Ina Square	913-551-7357